

QUARTERLY REPORT: JANUARY TO MARCH 2010

POVERTY REDUCTION BY INCREASING THE COMPETITIVENESS OF ENTERPRISES (PRICE)



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Executive Summary

In the **horticulture** sector the focus was on potato, eggplant, mango, and some cross-cutting initiatives. PRICE promoted the creation of a Potato Seed Growers Association in Bogra, and is now helping association members improve potato seed quality and obtain certification. PRICE also promoted contract farming of potato seed through Konika Seed Company and Gram Unnayan Karma Enterprise Development (GUKED). Technical guidance was provided to 1,500 table potato contract farmers of GUKED and 180 cooperative society members of Murail Rural Development Multipurpose Co-operative Society Ltd (MRDMCSL), obtaining yields of over 10 MT per acre. Demonstration plots showcased for farmers the excellent results obtained by good crop management.

In the case of eggplant, PRICE worked with 18 commercial farmers groups to train 470 farmers on production technology, safe pest management, and post-harvest handling. Demonstration plots showed farmers the benefits of the new technology. PRICE also introduced new varieties of eggplant to some of its partners, which will allow year-round production of this plant.

In mango, PRICE collaborated with Kansat Mango Farmers Multipurpose Cooperative Society Limited of Rajshahi to train 240 mango farmers on modern production and protection management, including post harvest handling technology.

In support of the horticulture sector, PRICE continued to promote the production and use of organic fertilizer, in partnership with Bogra-based Grameen Krishok Shohayok Sangstha Enterprise (GKSSE). Four-hundred farmers were trained on the application methods of vermi and tricho compost in potato, eggplants, tomato, and other vegetables, and several field days and demonstrations were organized.

PRICE continued to promote contract farming, both to increase the availability of high quality vegetable seed and to increase market access to resource-poor farmers in the south of the country.

Last, but not least, during this quarter PRICE helped prepare and then facilitated the participation of Golden Harvest Ltd. – a frozen vegetables and snack company – in the Dubai GULFOOD exhibition. This is the first time that a Bangladeshi company participates in this event, and it has opened up the possibility of a vast new market for Bangladeshi products.

As a result of PRICE interventions, horticulture sector partners increased their sales this quarter by approximately \$911,015, created 261 new jobs, and increased their investment in fixed assets by \$43,348. A total of 1,098 farmers were assisted for investing in improved technology and a total of 1,038 farmers were assisted in accessing loans.

In the **cultured fish sector**, PRICE and three of its partner organizations held 12 training programs on improved farming and farming management for 710 farmers, most of them (62%) women. The improved farming training included pond preparation, liming, fertilization, species selection, mono, mixed or polyculture fish combinations, stocking, feeding, and sampling. Farm

management training included soil, water, feed, and health management in fish farms. Four results demonstrations were organized, with the participation of an additional 400 farmers.

PRICE also assisted its partners with 29 trainings on group procurement and marketing. The trainings were conducted on material use and marketing of fish culture, aquaculture seed preservation, harvest and pond management, process of partial harvesting, and marketing of fish. A total of 1690 farmers and community fishers participated in these training programs, of which two thirds were women.

PRICE teamed with Fishtech BD Ltd, an aquaculture input seller, to train its marketing agents, dealers, and some lead farmers on improved and high density fish farming. The lead farmers act as demo farmers and the agents and dealers provide embedded services to farmers, while selling the micro inputs. This quarter PRICE helped Fishtech organize 18 training sessions, for a total of 720 participants.

As a follow up to the study tour to Thailand organized by PRICE last December, three participants - one fish farmer, one hatchery operator and the one polyculturist - have initiated improvements in their farming/business models which are being imitated by other sector players. The fish farmer renovated his fish pond to control plankton bloom biologically in Trisal; the hatchery operator replaced catfish seed production with mono-sex tilapia seed production utilizing the hormone treatment he observed in Thailand, and the polyculture farmer from Tarakanda introduced a new and more productive species combination, incorporating stinging catfish and use of floating feed.

PRICE organized market linkage workshops between 160 fish producers in the Mymensingh region and Golden Harvest Seafood and Fish Processing Ltd. Golden Harvest was also assisted in the training of its staff and suppliers on proper handling of fish through the cold chain, and its laboratory personnel was trained on chemical testing procedures for banned and unwanted substances in the preparation of food items for export.

PRICE convinced two of its partner NGOs, SSS and TMUS, to lend to fish farmers and reschedule interest payments to correspond to the fish production cycle. In this quarter, the cumulative number of small and medium farmers linked to micro-credit or micro-finance reached 245.

As a result of previous and ongoing interventions, the fish sector generated 576 full-time equivalent jobs this quarter, over \$3 million in domestic sales, and around \$37,000 in investment.

In the **shrimp sector**, most of the activity and results were generated through the GHERS activity implemented by World Fish Center. An accumulated total of 2,772 farmers were trained by the end of this quarter on improved farming methodologies of the Closed-System Pond Technology (CST), Modified Traditional Technology (MTT) or Traditional Best Management Practice (TBMP). All farmers received follow-up counseling from extension specialists.

Given the initial success obtained in increasing farmer productivity over 30%, while promoting the use of screened PL and other quality inputs, the GHERS initiative was extended until the end

of 2011. The goal now is to reach more than 20,000 farmers and increase yields above 700 kg per hectare.

Gearing up to the expansion of GHERS, WFC selected 11 new depots in Bagerhat, Khulna, and Satkhira districts, in addition to the six depots worked with previously, and the geographical reach was extended from 5 to 10 Upazilas. By the end of March roughly 4500 new shrimp farmers were selected, organized into approximately 180 groups, and incorporated into contract farming schemes.

In a separate intervention, PRICE trained over 200 sales agents and dealers on improved shrimp and fish farming, farming management, and general management, so as to be able to provide better embedded services to farmers.

As part of its collaboration with the GOB's National Action Plan to combat antibiotic contamination in farmed prawn (*golda*), PRICE concluded an experiment to identify the probable source of the nitrofurantol metabolites mainly responsible for rejection of prawn exports to Europe. The results of this experiment, although they require validation, suggest two important conclusions of relevance to the shrimp industry: 1) Nitrofurantol metabolite contamination probably originates in certain shrimp, poultry, and feed, and 2) Nitrofurantol metabolite contamination might be susceptible to elimination in live prawns by modifying their diet a sufficient number of days before harvesting.

Altogether, PRICE partners achieved \$3.09 million in additional sales in the shrimp sector this quarter, 95% of them to the export market. Most of these sales came from the GHERS initiative in the Satkhira-Bagerhat region. Seven contract farming initiatives in the greater Khulna area have also begun producing significant results.

In the **leather products sector**, PRICE conducted two important workforce training programs this quarter, under the umbrella agreement signed last year with the Leather Goods & Footwear Manufacturers & Exporters Association of Bangladesh (LFMEAB). In the case of Jennys Shoes Ltd., 14 supervisors and 61 new workers are being trained on leather selection criteria, manipulation and cutting of leather, sewing, lasting, finishing and quality control. In the case of Apex Adelchi, an MOU was signed to train up to 800 new workers in four batches on manipulation and cutting of leather, prefabricating and sewing, and lasting and finishing of shoes. The first batch started in February and includes 187 workers, almost all of them (179) women.

A marketing workshop was arranged between the Aarong chain of retail stores and seven PRICE-assisted leather product SMEs. As a result, Aarong asked four of the SMEs to present samples. The samples were approved by Aarong and work orders are expected soon.

PRICE linked a group of seven leather products SMEs with the access to finance component of the ITC Geneva BLSC project, implemented by the Leather Sector Business Promotion Council (LSBPC). As a result, this group of companies has been included as one the potential beneficiaries of a special finance fund to be implemented by Janata Bank Ltd.

PRICE subcontracted the Footwear Design and Development Institute (FDDI) of India to send a consultant to help the Bangladesh Leather Service Center (BLSC) laboratory install and operate an Ultra Violet (UV) Visibility machine to detect the level of formaldehyde and chrome-VI in leather products. As a result, these critical tests for export can now be carried out in Bangladesh, in benefit of the industry.

Leather sector partners increased their sales by almost \$480,000 this quarter, of which slightly more than half in the domestic market, and the rest in exports. 194 new jobs were created, 125 of them for women, and 271 people were trained. New investment was generated for over \$85,000.

In the area of **gender integration**, PRICE activities were successful in incorporating significant numbers of women into productive activities, particularly in the fish and in the leather products sectors. As noted above, several of our fishers' groups are predominantly female, and most of the jobs created this quarter with our leather sector partners were also for women.

PRICE is also contributing to Bangladesh's **food security**, especially through its work in the horticulture and fish sectors, given the growing importance of the produce from these sectors in the national diet. Our assisted farmers – especially the smaller ones - benefit from their increased productivity not only with higher incomes, but also with surplus production which serves to enrich the family diet.

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ACRONYMS AND ABBREVIATIONS

BADC	Bangladesh Agriculture Development Corporation
BARI	Bangladesh Agriculture Research Institute
BCLET	Bangladesh College of Leather and Engineering Technology
BDT	Bangladeshi taka (currency)
BFFEA	Bangladesh Frozen Food Exporter Association
BFRI	Bangladesh Fisheries Research Institute
BFVEA	Bangladesh Federation of Vegetables Exporters Association
BLSC	Bangladesh Leather Service Center
BRC	British Retail Consortium
BSFB	Brinjal shoot and fruit borer
BSFF	Bangladesh Shrimp and Fish Foundation
CCM	Cold chain management
DAE	Department of Agricultural Extension
DCA	Development Credit Authority
DOF	Department of Fisheries
EPB	Export Promotion Bureau
FIQC	Fish Inspection and Quality Control Lab (DOF)
FY	Fiscal year
GDA	Global Development Alliance
GHERS	Greater Harvest and Economic Return from Shrimp project
GOB	Government of Bangladesh
HACCP	Hazard Analysis and Critical Control Points
HORTEX	Hortex Foundation
IPM	Integrated pest management
ITC	International Trade Center
ISO	International Organization for Standardization
LCDF	Local Currency Development Fund
LGFMEA	Leather Goods & Footwear Manufacturers & Exporters Association
LSBPC	Leather Sector Business Promotion Council
LTSE	Leather Technologist SME Entrepreneurs
M&E	Monitoring and evaluation
MOC	Ministry of Commerce
MOF	Ministry of Fisheries
MOU	Memorandum of Understanding
NGO	Non-government organization
PHH	Post-harvest handling
PL	Post-larvae
SME	Small and medium enterprise
STTA	Short-term technical assistance
TOT	Training of trainers
WFC	WorldFish Center

PRICE Quarterly Report: Jan-Mar 2010

1. Introduction

PRICE (Poverty Reduction by Increasing the Competitiveness of Enterprises) is a five-year USAID-funded project, initiated in February 2008, with the goal of reducing poverty by promoting the development of the aquaculture, horticulture, and leather products sectors in Bangladesh. PRICE works with economic actors in the value chain to improve skills, expand access to information, link farmers and enterprises to markets, and expand access to finance. PRICE activities are market-driven and seek to share the benefits of growth with women, young adults, farmers and SMEs. Through its interventions, PRICE also helps value chain actors understand the benefits of working together to increase competitiveness and, through cost-sharing arrangements that reduce risk, helps SMEs and associations improve their processes and products so they have access to more and better markets, both domestic and international.

This report is prepared for USAID and contains the progress of the PRICE project during the second quarter of U.S. fiscal year 2010.

The report is divided into six sections and two annexes. The Executive Summary provides a synopsis of the main activities and achievements during this quarter. After a brief introduction to the project, Section 2 describes PRICE activities and progress in the horticulture sector. Sections 3 and 4 describe activities and accomplishments in the cultured fish and shrimp sectors, respectively. Section 5 elaborates on the progress made in the leather products sector. Section 6 suggests PRICE contributions in the areas of equity integration and food security. The first of the annexes contains the performance indicators, updated to March 2010, and the second describes the performance measurement methodology.

2. Horticulture

PRICE is focusing its activities in the horticulture sector on three crops: potato, eggplant, and mango. Additionally, we are supporting several initiatives for the benefit of the entire sector, including the establishment of plant clinics, the production and use of organic fertilizer, the production and marketing of safe vegetables, and the participation of Bangladeshi food processing companies in international trade fairs.

A. Potato

Promoting a potato seed growers association

Bogra is an important potato growing areas of the country and there is a great demand for quality seeds. Seed producing companies have proliferated, but they lack the necessary technical expertise to produce good quality, disease-free seeds. Each entrepreneur has his own way of growing seeds and marketing them, without following any standard technology or certification process. This is a detriment to the industry and contributes to a poor yield.

To address this problem PRICE started working with the Rural Development Academy (RDA) in Bogra, since the institute has technical expertise and facilities for growing foundation seeds. At the same time, PRICE pursued the Seed Certification Agency to get the seed production process supervised and eventually certified. With the encouragement of PRICE and RDA, eight potato seed growing enterprises formed a Potato Seed Growers Association in Bogra, on February 10. PRICE partners GUKED and MRDMCSL were also associated with the initiative.

PRICE and RDA are now working with the association members to improve potato seed quality by providing technical support training and linking them with the potato tissue culture laboratory. The Seed Certification Agency will undertake the job of certification for the members of the association. The association members will share experiences, get access to each other's facilities, and collectively work to improve storage conditions and cold storage space.

Contract growing of potato seed

PRICE is supporting Konika Seed Company in the southwest and GUKED in the north to produce high quality potato seed through contract farming. Under PRICE supervision, GUKED produced 630 tons of Diamont and Cardinal variety seed potatoes on 70 acres of land in Durgapur Village, Kahalu Upazila this quarter. The potato seeds will be distributed to their table potato contract farmers. This year the yield of seed potato increased to 9 MT per acre compared to last year's production of 4.2 MT per acre, due to regular technical supervision and training provided to the seed growers.

Konika Seed Company also started formal contract farming with support from PRICE and involved 91 farmers during this season. With PRICE technical support, Konika has been able to increase yields from 5 MT per acre in 2008 to 9.5 MT per acre this year, and has increased the cultivated area dedicated to seed potato.



Seed potato production in the net house in Bogra

Facilitated by PRICE, contract farmers of Konika Seed Company cultivated seed potato in 77 acres of land, producing 732 MT tons of potatoes. Four different varieties of potato - Diamont, Cardinal, Ultra, and Granola - were harvested during the last week of February.

Demonstration plots on crop management techniques

PRICE assisted MRDMCSL in Bogra to establish demonstration plots in their main two production sites, Vagdugra and Bishnupur villages. These plots are used to demonstrate the effect of various crop management techniques, encouraging farmers to apply the techniques to their plots to get better yields. Neighborhood farmers were invited during the production period several times and the PRICE technical team showed and explained the modern technologies adopted in the plots. Crop cutting day was held on February 28 in Bishnupur and March 2 in Vagdgra, where all farmers of the MRDCSL, Department of Agricultural Extension (DAE) officials, and GUKED representatives were present to see the quality of potatoes and the yield. The average yield from the plots was 27 MT per hectare, much higher than last year's average of 5 MT per acre. Farmers were amazed to see the result that can be achieved by adopting modern technology and better management practices.

KSCPL established three demonstration plots and shared the results with potato farmers in order to motivate them to adopt modern technology. Two field days were organized with support from PRICE during this quarter, the first on February 2 at Rakhelvoga Eid-ga Field, Moheshpur, Jibonnagor, Jhenaidah and the second one on February 4 at Duppathalia Road, Loknathpur, Damurhuda, Chuadanga. More than 100 farmers participated in each of the field days, along with officials from DAE, Seed Certification Agency, and Bangladesh Agriculture Development Corporation (BADC), as well as representatives from local government and banks.

Increased production and quality of potato

While seed and table potato were in the field across most of the northern areas during January and February, technical guidance was provided to 1,500 contract farmers of GUKED and 180 cooperative society members of MRDMCSL of Bogra. Good weather, supply of good quality inputs to the farmers, training on production and protection technology, and regular supervised technical support facilitated by PRICE in this quarter helped the farmers achieve a good harvest.



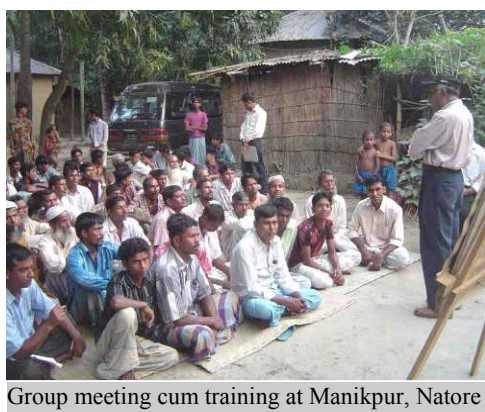
GUKED Contract farmer MRDMCSL potato demo plot

During this quarter the 1,500 contract farmers of GUKED produced potato in 733 acres of land, in comparison to only 33 acres in 2009. Due to the introduction of the contract farming system, PRICE was able to help GUKED obtain quality inputs, as well as crop-specific season-based loans. The total production of table potato was 7,400 MT, for an average yield of 10.2 MT per acre, compared to only 1.35 MT per acre last year. Granola was the main variety, followed by Diamont and Cardinal.

B. Eggplant

Increased productivity and safe pest management

PRICE, in collaboration with Agricultural Advisory Society, has been working with a Farmers' Federation consisting of 18 commercial farmers groups in Natore (10 groups), Pabna (4 groups), and Rajshahi (4 groups) districts since last November. Assistance was provided this quarter to increase productivity and maximize the effect while minimizing the cost of pest control, taking utmost care of the environment.



Group meeting cum training at Manikpur, Natore

For this purpose PRICE introduced safe pest management (SPM) and sustainable productivity, a twin-track approach which uses several control methods and techniques, including integrated pest management (IPM), use of biological control and bio-pesticides, and soil nutrient management, along with other associated crop husbandry practices.

During this reporting period, 470 farmers participated in 16 PRICE-facilitated training events on production technology, safe pest management and post-harvest handling in Natore (180), Pabna (150), and Rajshahi (140) districts, of which 30 were female farmers. Participatory, hands-on training was held January 2-7 at Charborgoria of Ishurdi Upazila of Pabna. Training was followed by demonstrations and technical support during the growing season.

Safe pest management demonstration

PRICE facilitated participatory block demonstrations on safe pest management to control brinjal shoot and fruit borer (BSFB) insects, the most devastating pest for eggplant. These demonstrations were conducted until the end of March on 8.5 acres of land in Natore. Of that land, 7.5 acres was used as block demonstration at Khamar Pathuria Madrasha Para and one acre was used as a cluster demonstration with five farmers at Poschim Noyapara in Gurudaspur Upazila.

Sex pheromones to control pests were replaced on January 10 with a new batch and a weekly release of two types of parasitoids continued throughout the growing season. The last batch of parasitoids was released in the field on March 25. No pesticide was used during the whole growing season and farmers saved Tk. 20,000 on average in 0.33 acres of eggplant cultivated land, which is around 40% of the total cost of cultivation.

To help the farmers master the new methodologies, all activities were carried out under the guidance of a specialist. PRICE was instrumental in involving Ispahani Biotech, a local company, to supply the pheromones and parasitoids and to help implement the program. Several pesticide dealers were also invited to participate in the farmers training course.

Year-round eggplant production through introduction of new varieties

After harvesting winter eggplants in early January, a new variety, White Joshori, was transplanted on January 22 to Khamarpathua of Natore. PRICE facilitated the establishment of two demonstrations in farmers' fields with the newly introduced variety. The White Joshori crop harvest would start during April-May and continue until October-November. During April-May the price of eggplant is high and the farmers are expected to get premium price. During July-August the local White Islampuri local variety will be planted.

C. Mango

Supporting Mango Farmers Association of Kansat for increased productivity



Mango Farmers – traders training at Kansat

PRICE facilitated training for 240 mango farmers of Kansat Mango Farmers Multipurpose Cooperative Society Limited (KMFMCSL) in Chapai Nawabganj of Rajshahi district on modern production and protection management, including post-harvest handling technology. PRICE encouraged and helped the farmers to get organized and form a new association to address their constraints.

The training took place March 8-18 with 30 farmers participating in eight batches and

was led by scientists from the Mango Research Institute. The training had a practical application focus, taking the farmers to the nearby mango orchards. During that period most of the mango plants were having inflorescence, which is one of the critical times for the plant. Farmers were given hands-on training on management practices that they could adopt in their own orchards.

A training manual was developed and distributed to the farmers for use during the training. Technical advice is being provided to the farmers and field monitoring is ongoing. However, due to the long dry spell and high drought stress there is a possibility of high fruit drop and poor realization. A PRICE consultant is providing support to mitigate the situation through changing irrigation schedules and other measures.

D. Other PRICE interventions in the horticulture sector

Plant clinic for health service support

Diagnosis and management of plant health problems is one of the prime constraints for cultivation of high value horticultural crops in the project districts. Accordingly, PRICE promoted the establishment of two temporary plant clinics in different bazaars, where plant health specialists opened small booths and displayed symptoms and signs of various diseases in eggplants, onion, and garlic (this is known as the “going public” approach). One clinic was established on January 10 at Purba Noyapara of Gurudashpur and the second on February 7 at Bulear of Briagram. About 180 farmers received prescriptions for their plant health problems. The first public approach was organized at Purba Nayapara bazaar on March 7.



Plant clinic operation: Plant health specialists providing plant health advices at (a) Khamar Pathuria Madrasha para, (b) Purbo Noyapara, (c) Manikpur and (d) Dhulia villages in Natore dsitriacts

Promoting the use of organic fertilizer

In collaboration with BARI and DAE, PRICE continued to support Bogra-based Grameen Krishok Shohayok Sangstha Enterprise (GKSSE) in improving the quality of its compost. Four demonstrations on tomato, cucumber and bitter gourd were established during the quarter in Hasnapara, Gabtoli, Jangalpara Shakharia of Sadar Upazila and Taraf Sartaj of Gabtoli Upazila on use, application, and effect of tricho and vermi compost on soil and crop productivity.



GKSSE Training



GKSSE Demo plot

PRICE also facilitated training for 400 farmers associated with GKSSE on the application methods of vermi and tricho compost in potato, eggplant, tomato and other vegetables. The trainings started from January 4 at Kagoil, Gabtoli, Bogra and held in other locations such as Sultanpur, Mahashan, Shoptaldigi of Shibgang and also at Sadar Upazila of Bogra. One yard meeting was held in Daripara, Gabtali with 40 farmers participating to discuss the effects of organic fertilizer in the farmers' fields.

On March 6, one demonstration plot of potatoes in Kandal in Sadar Upazila, had more than 70 local farmers actively participating. Scientists of Tuber Crop Research Centre of BARI, PRICE personnel and farmers exchanged views and shared ideas during the field day.

With PRICE support, GKSSE organized a technical orientation course on organic fertilizer to 25 Sub Assistant Agricultural Officers of DAE in Bogra, Sadar Upazila on January 18. Linkages were established with DAE to execute 24 demonstrations as part of a market promotion effort. As a result of these efforts, GKSSE was able to expand its network from four upazilas to 12 upazilas, and to appoint 10 marketing promoters, three regional managers and 60 retailers. Through these efforts the company sold over 80,000 kg of organic fertilizer in 12 Upazilas of Bogra, with a sales value of BDT.1,20,3000/ .

Contract farming for safe vegetables



PRICE continued to facilitate the contract farming initiatives of Organix at Khulna for producing and marketing eco-friendly vegetables. PRICE provided technical support to the farmers in post-harvest handling, particularly harvesting, grading and marketing of the produce according to the demand of wholesalers and super-shops.

In this quarter PRICE assisted Organix in expanding their marketing outside Khulna city, where vegetable do not grow due to soil salinity. By linking to these markets, farmers are able to make good profit. A quick assessment revealed that price of vegetables during peak seasons in those areas was much higher than the city markets.

On March 29 Organix organized a dialogue session in Khulna to promote markets for vegetables produced through good agricultural practices and which are safe for health and for the environment, and also to increase awareness of the consumption of pesticide-free vegetables. The Honorable City Mayor inaugurated the event and the Director of Environment and the Deputy Director of DAE were present as special guests. More than 100 participants from different government and non-government organizations, financial institutes, media, agro-inputs suppliers, and vegetable traders, along with farmers, participated in the dialogue session. The dialogue created enthusiasm among the participants and several traders and wholesalers have shown interest in opening a separate section in their outlets for safe vegetables.

Contract farming for quality vegetable seeds



With PRICE assistance, Chuadanga-based Padma Seeds organized two batches of trainings for 50 contracted vegetable seed producing farmers during January.

Once they are trained, Padma Seeds supplies the farmers with certified quality seeds for reproduction. Earlier participants of these training courses had already produced and supplied Padma with 9600 kg of red amaranth seed, 2140 kg of stem amaranth, 2400 kg of kangkong, 1570 kg of bottle gourd, 390 kg of Indian spinach, 9840 kg of spinach, and 840 kg of sweet gourd.

Regular inspection at the Indian Spinach seed plot of Padma seeds

Contract farming in support of marginal farmers

PRICE, in collaboration with EFADF Agro business, has started working with 500 resource-poor farmers in the south of the country to produce and market summer vegetables, particularly eggplant, bitter gourd and cucumber. Farmers in this region cultivate rice in the low lying flooded land mainly for family consumption and erect dykes to cultivate vegetables as source of cash. EFADF has started contract farming with these farmers, supplying organic fertilizers, seeds and other inputs. Marketing is a major constraint for the farmers.

During this quarter PRICE helped EFADF train farmers on intensive, multistoried vegetable cultivation in the narrow dykes using organic fertilizer and bio-pesticides while adopting grafting techniques for the control of nematode in eggplant. The first training started on March 14 in

Lokpur Uttarpara, under Fakirhat Upazila. So far 175 farmers have been trained in seven batches, of which 164 were male and 11 female. The training was held in three different locations, Patharghata, Tilok and Samanta-sena of Rupsha, and Fakirhat Upazila. The trainings were mainly on improved and environmental-friendly vegetable production technology and contract farming system. PRICE also linked EFADF with another of its partners, Lalteer Seeds, for the purchase of quality seeds.



EFADF resource-poor farmers are producing vegetables in dykes in Khulna

Farmers of Lokpur have already started producing vegetables and could start marketing through wholesalers in Mongla. EFADF has appointed three marketing promotion staff to establish a marketing network for the contract farmers.

Access to the international market through participation in GULFOOD



Food safety – HACCAP Training at Golden Harvest

Golden Harvest is an enterprise engaged in producing frozen food, especially frozen vegetables and snacks for export. PRICE has helped the company link with farmers to get fresh and good quality vegetables right from the field and training its management and workforce to follow BRC guidelines, including HACCP, in order to be compliant with the requirements of

international buyers. The company recently obtained the BRC certificate with PRICE assistance. PRICE also linked the company to BARI laboratory to have its product tested for minimum residual level in certain export products.

During this quarter, PRICE also provided support to Golden Harvest so they could participate in the Dubai GULFOOD trade fair, one of the largest food festivals in the world, from February 21-24. This is the first time that a Bangladeshi company participates in this event, and it appears to be an excellent market opportunity for local food products. More than 80 buyers from different countries came to the Golden Harvest stand, and several buyers took samples and have begun negotiations with the company.



Buyers meeting inside the Golden Harvest Stand at Gulfood

Access to loans

PRICE-assisted organizations facilitated access to loans for farmers so they could bear cultivation costs, including inputs. A total of 1,038 farmers received assistance accessing loans during this quarter, of which 900 were from GUKED, 93 from Konika Seeds, and 45 from Organix. GUKED provided loans to potato farmers worth BDT 9,150,000 to cover production costs, including seeds, fertilizer and pesticides. Konika Seeds loaned BDT 3,156,132 to their farmers for the production of potato seeds, while Organix provided BDT 115,000 in loans to cover the production costs for their vegetable farmers.

D. Quantitative results

This quarter the horticulture sector partners increased their sales by approximately \$911,015. In the northern region, GUKED, GKSSE and Murail Rural Association generated around \$618,156, while in the southwest, Padma Seeds and Organix contributed about \$77,355. Lal Teer Seeds and Syngenta Seeds together achieved \$216,504 in new, country-wide sales.

In addition to increased sales, some partners have benefitted from increased efficiency and reduced costs. For example, GUKED informed us that the cost of production for its farmers has decreased by about TK 3 thousand per bigha, thus increasing their profit margins.

261 new jobs were created by our partners this quarter, 102 of them for women. Partners also increased their investment in fixed assets by \$43,348, most of which was due to GKSSE investing around \$36,101 to expand its capacity.

The following table shows some of the quantitative results of the sector in the quarter:

Performance of Horticulture Sector (Jan-Mar 2010)										
Partners	Sales (USD)			Jobs			Investment (USD)	Loan Access		
	Export	Domestic	Total	M	F	T		M	F	T
GUKED	0	579,130	579,130				-	900	-	900
Murail Rural Society	0	22,469	22,469	2	3	5	-	-	-	-
GKSSE	0	16,556	16,556	4	83	87	36,101	-	-	-
Konika Seeds	0	-	-	7	1	8	-	93	-	93
Padma Seeds	0	41,308	41,308	0	7	7	1,594	-	-	-
Organix	0	36,047	36,047	1	6.4	7	5,652	45	-	45
Lal Teer Seeds	0	130,435	130,435	-	-	-	-	-	-	-
Syngenta Seeds	0	85,069	85,069	-	-	-	-	-	-	-
Total	0	911,015	911,015	102	160	261	43,348*	1,038		1,038

* Minor difference in added-up figure because of rounding up the decimal figures.

During this quarter 1,098 farmers (61 of them women), mostly from AID Agro Mart, KMFMCSL and GKSSE, have received assistance so they could invest in improved technology. Trainings were conducted on the use of organic fertilizer and modern farming of potato production and management in Bogra. At Chapai Nawabganj, training of modern farming of mango cultivation, vegetable seed production took place while contract farming system training occurred at Chuadanga. In Jhenaidah, improved vegetable farming and contract growing system trainings were held. Improved and environmentally friendly vegetable production technology and contract farming system trainings were held in Khulna and Borguna. 25 people (SAOs of DAE) received workforce development skills training in Bogra through GKSSE.

Summary of Training in Horticulture during this Quarter

SL	Partners	Workforce				Productivity			
		Training	Men	Women	Total	Training	Men	Women	Total
1.	Murail Rural Society					2	60	-	60
2.	GKSSE	01	25	-	25	10	398	-	398
3.	Padma Seeds					2	50	0	50
4.	AID Agro Mart					7	125	50	175
5.	EFADF Agro-business					7	164	11	175
6.	Kansat Mango Farmers' Co-operative Society					8	240	-	240
Total Horticulture		1	25	-	25	36	1,037	61	1,098

3. Fish

Training on improved fish farming systems and management

In collaboration with three of its beneficiary associations – SSS, JSK and NMS -, PRICE organized a total of 13 training programs on improved farming and farming management for higher and more sustainable yields. The improved farming training included pond preparation, liming, fertilization, species selection, mono, mixed or polyculture fish combinations, stocking, feeding, and sampling. Farm management related trainings included soil, water, feed, and health management in fish farms.

In addition to productivity training, all three partners received training on good aquaculture practices (GAP), integrated farming, and responsible farming without endangering the environment. Particular emphasis was made on the reduction of water pollution, responsible waste management, judicious feed usage, efforts to increase natural productivity, soil, water and health management, and prevention of disease occurrences. PRICE produced the accompanying training material in easy Bengali, for distribution among the trainees.

The trainings took place between January 2 and March 29 in Natore, Sherpur, Shariatpur, Feni, Rajbari, Mymensingh, Comilla, Sylhet, Moulovibazar, Sunamganj, Bogra, Gaibandha, Khulna, Satkhira, and Bagerhat.

Society for Social Service (SSS) is an NGO which has organized all-women fish farming groups for resource-poor families with small ponds in the districts of Tangail, Comilla, Chandpur, Lakshmipur, Natore, and Rajshahi. They were provided training on improved farming on poly or mixed culture of tilapia, stinging catfish, climbing perch and carp. Some of the larger farmers in the group requested training on farming intensification and were then offered training on mono and mixed culture of Thai catfish and mono-sex tilapia, incorporating plankton-feeding carp under high-density and semi-intensive culture systems. Fish farming for these housewife-centered families is for family nutrition and any excess is used for sale and income generation to improve farming and quality of life. To date SSS, with PRICE assistance, completed training for 1420 women household fish farmers.



Training on group procurement and marketing

PRICE assisted SSS, NMS, and JSK to conduct a total of 29 trainings on group procurement and marketing. The trainings were conducted on material use and marketing of fish culture, aquaculture seed preservation, harvest and pond management, process of partial harvesting, and

marketing of fish. A total of 1690 farmers and community fishers participated in these training programs, of which two thirds were women. The trainings were conducted between January 2 and March 20 in Tangail, Rajshahi, Chandpur, Comilla, Lakshmipur, Sherpur, Shariatpur, Rajbari, Khulna, Satkhira, Bagerhat, and Jamalpur districts.



Male participants being trained

Jenoseba Kendra (JSK) is a local NGO which organizes family-based fish farming in small bodies of water in Feni, Rajbari and Madaripur. They are a group of micro, small, and a few medium farmers of both sexes and PRICE in collaboration with JSK supports in providing them trainings on improved methods of fish culture and farming management focusing mainly on polyculture and mixed culture of carp and tilapia. Fish farming is food security to JSK members, as they eat part of the fish they produce and sell the rest to buy other edibles. This quarter PRICE assisted JSK with 10 productivity trainings for 600 participants, of which 361 were women. A total of 900 JSK members have already been trained.



Participants of NMS fishers' group receiving training

Nakla Mostajibi Somity (NMS) is a community-based group of fishers whose livelihood is under threat due to the decline in open water fishing. They took lease of a publicly owned natural depression commonly known as beel or jal-mohal, for community-based fish farming. NMS has 300 members in their group, including 80 women. PRICE has assisted them with training programs on fish fry nursing and release, removing aquatic weeds, controlling carnivore species and beel fisheries management. The beel-based farming, harvest, and marketing is done collectively and profits are shared equally by the members.

Training for embedded services to fish farmers

High density and semi-intensive fish farming requires inputs such as micro-nutrients, vitamins, minerals, water purifier, and medicine, in addition to seed, feed, fertilizers and lime. These micro inputs need to be applied properly and in the correct amounts for high and sustainable yields. PRICE has teamed with Fishtech BD Ltd, an aquaculture-based micro input seller enterprise, to train their marketing agents, dealers, and some lead farmers on improved and high density fish farming. The lead farmers act as demo farmers and the agents and dealers provide

embedded services to farmers, while selling the micro inputs. This quarter PRICE helped Fishtech organize 18 training sessions, for a total of 720 participants.

Results demonstration to increase outreach

During this quarter PRICE assisted two of its partners, Rakhaing Development Foundation (RDF) and Trinamool Manobik Unnayan Sangstha (TMUS), to conduct four result demonstrations on improved fish farming to a total of 400 farmers. This was a joint effort by RDF and TMUS to increase their outreach and attract new members. The demonstrations took place between January 18 and February 20 in Amtoli, Barguna; Santhia, Pabna; Kashinathpur, Pabna, and Taltoli, Barguna.



Freshwater fish stored for processing to export

Promoting market linkages

In coordination with Golden Harvest Seafood and Fish Processing Ltd., (GHSFPL), PRICE organized two linkage workshops involving two groups of fish producers in the greater Mymensingh region. The first workshop was held at Sherpur on January 16 and was attended by 52 participants from Nokla Matshyajibi Samity (NMS). Golden Harvest explained the quality specifications for exportable fish to ethnic markets, and samples of the NMS produce were taken to the processing plant. The second workshop was held at Trisal on 9 February with 108 participants from Trishal Fish Farmers' Association.

Training for capacity build-up of lab technicians

As part of capacity development of the laboratory procedures at Golden Harvest Seafood and Fish Processing Ltd, PRICE is assisting its laboratory staff on chemical testing procedures for some banned and unwanted substances in the pre-process and processed items for export. It is also providing guidance to the staff on basic laboratory procedures of sampling, sample preparation for analysis, lab based microbial culture, total count, isolation, identification and related matters.

Initiatives taken after the Thailand study trip

In December 2009 PRICE organized a study tour to Thailand to observe highly efficient fish and shrimp seed production procedure, diverse high yielding aqua-farming, quality grade feed manufacturing, responsible post-harvest handling, packaging, storage and transportation and processing. The study tour also participated in hands-on experience sharing with their Thai counterparts. The participants from Bangladesh realized that they are far behind in productivity, species diversification, and other areas of the value chain. However, they considered the trip was very useful for them and deepened their understanding of how to remodel and renovate their

aquaculture business involving fish and shrimp. Observing the success of Thai aquaculturists and having the hands-on experiences with the technology, three participants - one fish farmer, one hatchery operator and the one polyculturist - have initiated changes in their farming/business pattern. The fish farmer renovated his fish pond to control plankton bloom biologically in Trisal, following the methods he observed in Thailand. The same farmer also remodeled his family-owned small household feed pellet machine to reduce feeding costs. The hatchery operator - located at Boilor in Mymensingh - replaced catfish seed production with mono-sex tilapia seed production utilizing the hormone treatment he observed in the study tour. The polyculture farmer from Tarakanda introduced a new species combination incorporating stinging catfish and use of floating feeds as he observed in the study tour. All three farmers are expecting better yields and profit in coming days.

Access to finance

Many of the association-based members of PRICE partner organizations are micro and small fish farmers lacking capital and resources for improved farming. Most of these farmers are also associated with other small scale economic activities in rural areas and often take loans from micro-credit sources. However, micro-credit loans require that interest is paid weekly, which is not suitable for a productive activity such as aquaculture. PRICE convinced two of its partner NGOs, SSS and TMUS, to lend to fish farmers and reschedule interest payments on a seasonal basis. In this quarter, the cumulative number of small and medium farmers linked to micro-credit or micro-finance reached 245. The NGOs are providing micro-finance with seasonal interest payments on the condition that the loans must be used to culture fish and be paid upon the first harvest. The maximum micro-credit limit is BDT 30,000 and micro-finance is BDT 200,000. PRICE partner members received loans in the range of BDT 20,000 to BDT 60,000. In addition to SSS and TMUS, Jenoseba Kendra (JSK) has also agreed to provide PRICE-assisted farmers with extra time for loan payments based on the production cycle. The credits have been used mostly for the procurement of quality input, such as fish seed, fertilizer and lime.

Quantitative results

Fish aquaculture sector partners increased their sales by around \$3.07 million in this quarter. Most of the growth took place in the Mymensingh-Jamalpur area, where four fish farmers associations or cooperatives and one fish seed traders association registered new sales of around \$2.3 million.

The TFFS association – which groups larger farmers – achieved yields of 70-80 ton/ha and registered high revenue increase. The PFPFA - a group of hundreds of small and medium farmers cultivating almost 20 diverse species – also showed strong growth. The DMBBS seed traders association made good business with over-wintered fish seeds during this quarter.

In Bogra, three fish farmers associations contributed about \$265,000 in sales, while two fish farmer's association/cooperatives in Comilla-Noakhali-Rajbari area achieved increased sales of \$21,000. All the sales reported in the fish subsector are domestic sales.

PRICE partners together created 576 full-time equivalent jobs in this quarter, and generated around \$37,000 in investment.

In this quarter 1,358 farmers (339 of them women) received assistance to invest in improved technology; 1,450 farmers (939 women) received assistance to improve management skills, and 245 farmers (all women) gained access to loans.

The Following tables show the major accomplishments of the fish sub-sector in the quarter:

Performance of Fish Sector (Jan-Mar 2010)

Partners	Sales (USD)			Jobs			Investment (USD)
	Export	Domestic	Total	Women	Men	Total	
DMBBS	-	883,627	883,627	-	18	18	-
PFPFA	-	116,144	116,144	-	152	152	2,765
TFFS	-	1,272,080	1,272,080		0	0	-
Nokla Motsojibi Somity	-	23,957	23,957	-	-	-	-
Bamunji Beel Motsojibi Somity	-	4,174	4,174	-	-	-	-
TMUS	-	-	0	1	38	39	6,792
Kahaloo Fish Farmers' Association	-	34,065	34,065	-	5	5	14,232
Mourail Fish Farmers' Association	-	128,706	128,706	-	17	17	5,261
Pachpir Bazar Fish Farmers' Association	-	102,412	102,412	-	4	4	6,786
SSS	-	13,180	13,180	-	4	4	552
Jana Seba Kendra	-	8,343	8,343	0	3	3	556
RDF	-	466,392	466,392	9	317	326	-
Fishtech Ltd.	-	16,304	16,304	2	6	8	-
Total	0	3,069,383	3,069,383	12	564	576	36,945

Training in the Fish Sector Jan-Mar 2010

SL	Partners	Productivity				Management			
		Training	M	F	Total	Training	M	F	Total
01.	Society for Social Service (SSS)	01	0	60	60	08	0	470	470
02.	Nakla Motsyajibi Somity (NMS)	01	30	20	50	04	139	61	200
03.	Jano Seba Kendra (JSK)	10	239	361	600	17	428	592	1020
04.	Golden Harvest Seafood and Fish Processing Ltd. (GHSFPL)	01	108	0	108				
05.	Fishtech (BD) Limited	18	720	0	720				
Fish Total =		31	1097	441	1538	29	567	1123	1690

4. Shrimp

Renewal of the GHERS subcontract with World Fish Center (WFC)

The first phase of the GHERS subcontract concluded this quarter, with a total 2,772 farmers having been trained (in previous quarters) on improved farming methodologies of the Closed-



Final Harvest of a CST farm

System Pond Technology (CST), Modified Traditional Technology (MTT) or Traditional Best Management Practice (TBMP). This quarter all 2,772 farmers received follow-up counseling from the extension facilitators and/or extension specialists.

Given the initial success obtained in increasing farmer productivity over 30%, while promoting the use of screened PL and other quality inputs, the GHERS initiative has been extended until the end of 2011. The goal is now to reach more than 20,000 farmers and increase yields above 700 kg per hectare.

New shrimp depots and farmers for the GHERS initiative

WFC selected 11 new depots in Bagerhat, Khulna, and Satkhira districts, in addition to the six depots worked with previously, in order to implement the GHERS extension. The working area was extended from 5 to 10 Upazilas. Improved farming and good aquaculture practices (GAP) will be promoted through outgrowing/contract farming schemes, which will strengthen the current input/credit supports by depots to farmers. Since GHERS will work with farmers in clusters, the traceability system designed by the Bangladesh Quality Support Program (BQSP) will be followed where it exists.

By the end of March 2010, roughly 4500 new farmers, both male and female, had been organized into approximately 180 groups and incorporated into contract farming schemes through the GHERS initiative.



An informal farmers meeting with GHERS

Promoting the production and distribution of quality feed

PRICE is helping Satkhira Feed Industries Ltd (SFIL) to develop the capacity of its sales agents to provide embedded services to fish and shrimp farmers in the greater Khulna region. A total of 12 training programs for their agents and dealers were held on improved shrimp and fish

farming, farming management, and general management. 231 trainees participated in the productivity trainings and 217 in the management trainings.

Experiment to find the source of nitrofurantoin contamination

As part of its collaboration with the National Action Plan to combat antibiotic contamination in farmed prawn (*golda*), PRICE designed an experiment to identify the probable source of the nitrofurantoin metabolites mainly responsible for rejection of prawn exports to Europe. The experiment was implemented with the close and invaluable cooperation of the Bangladesh Fisheries Research Institute (BFRI) and the Department of Fisheries (DOF).

The experiment was conducted at BFRI ponds located in Cox's Bazaar, using nine different types of feed in 16 different but identical ponds, with or without replications. Significant presence of nitrofurantoin metabolites was found after three and a half months in *golda* fed with shrimp feed, poultry feed and – to a lesser degree - with fish feed, as well as in *golda* fed with prawn shells. On the contrary, no nitrofurantoin metabolites were detected in *golda* which received no supplemental feed or were fed with snail meat, poultry droppings, cow dung or fertilizer. After six months, *golda* nourished with supplemental feed and with prawn shell still showed presence of nitrofurantoin metabolites, although in smaller quantities.

The final stage of the experiment – conducted this quarter - consisted in trying to determine if the nitrofurantoin metabolites would be eliminated by the live *golda*, if the offending feed was eliminated from its diet. After having eliminated shrimp feed from their diet for five days, *golda* still exhibited the presence of nitrofurantoin metabolites, but these disappeared after 10 days. The same situation occurred in the case of fish feed.

The results of this experiment, although they require validation, suggest two important conclusions of relevance to the shrimp industry: 1) Nitrofurantoin metabolite contamination probably originates in certain shrimp, poultry, and feed, and 2) Nitrofurantoin metabolite contamination might be susceptible to elimination in live prawns by modifying their diet a sufficient number of days before harvesting.

Quantitative results

PRICE achieved \$3.09 million additional sales in the shrimp sector this quarter, most of which is from the GHERS initiative in the Satkhira-Bagerhat region. The additional sales were generated by 2700 farmers who received improved farming under GHERS and used better inputs, including screened PL of shrimp, under three improved farming techniques: CST, BMP and MTT. The GHERS initiative mainly focuses on shrimp, but farming integration is done with freshwater prawn and finfish in the case of the BMP and MTT methods. The revenue earnings from GHERS therefore include sales of bagda, *golda* and fish. Traditionally the harvest from shrimp farming during first quarter of the calendar year remains at a minimum level. However, last year farming under GHERS was devastated by cyclone AILA and farmers had to restock, which prolonged the farming season.

Significant sales increases were also shown by Satkhira Feed Mill as a result of better feed formulation, increased production of shrimp, prawn and fish feeds, better packaging, expanded marketing network, and demo farming by trained lead farmers.

Seven contract farming initiatives in the greater Khulna area achieved increased sales of \$74,600 with mutually agreed buying back of shrimp and prawn. All of them practiced integrated farming under contract farming scheme centering on depots or processing plant. Despite these successes, a lot remains to be done to establish ideal contract farming systems with meaningful value chain financing and reduced or no side selling.

The shrimp sector also increased investment by US \$4,426 which was entirely contributed by Gazi Fish Ltd. in Dacope of Khulna.

In this period, 231 farmers (5 women-led) have received assistance to improved technology. 217 farmers (2 women-led) have received assistance to improve management skills.

The Following table shows the major accomplishments of the sector in the quarter:

<u>Performance of Shrimp Sub-sector (Jan-Mar 2010)</u>							
Partners	Sales (USD)			Jobs			Investment (USD)
	Export	Domestic	Total	Women	Men	Total	
Din Bijoy Enterprise	29,464	1,551	31,014	0	0.64	1	-
Vairob Fish Agency	20,074	1,057	21,130	0	1	1	-
Mofa Fish Processing Private Limited	1,463	77	1,540	0	0	-	-
Modina Fish	13,217	696	13,913	0	1.30	1	-
North Khulna Poultry and Fish Feed	-	-	-	0	5	5	-
Gazi Fish Culture Ltd.	-	-	-	0	0	-	4,426
Razu Enterprise	-	-	-	0	0.29	0	-
Mondal Fish	3,880	204	4,084	0	0.32	0	-
Satata Fish	2,857	150	3,007	0.28	0	0	-
Satkhira Feed Industries	250,510	13,185	263,695	0	2	2	-
GHERS WFC	2,612,500	137,500	2,750,000	0	0	-	-
Total	2,933,965	154,419	3,088,384	0.28	10	11	4,426

Training in the Shrimp Sector Jan-Mar 2010

SL	Partners	Productivity				Management			
		Training	M	F	Total	Training	M	F	Total
01	Satkhira Feed Industries LTD.	06	226	5	231	06	215	2	217
Shrimp Total		6	226	5	231	06	215	2	217

5. Leather Products

Workforce development with Jennys Shoes Limited

PRICE started this training program in December 2009 in the framework of the umbrella MOU signed with the Leather Goods & Footwear Manufacturers & Exporters Association of Bangladesh (LFMEAB) to collaborate in overcoming the scarcity of skilled workers in the industry. Fourteen supervisors and 61 new, unskilled workers are being trained. The master trainer, appointed by PRICE, conducted a TOT for the 14 supervisors to transfer technical knowledge of modern shoe making to the workers. The training was based on the modules developed by PRICE with Jenny's experts during the program on the overall process of footwear manufacturing. The major focus of this training is in the following areas: leather selection criteria, manipulation and cutting of selected leather for its best utilization, prefabrication and sewing of cut leather, lasting of stitched leather, finishing of shoes, and quality control.

A monthly skill test is taken to assess the progress of the trainees. So far 16% have achieved very good grades, 42% good, 32% average and 10% poor. The strong performers are already designated as "on the job trainees" and incorporated into the main production lines, thus contributing to generate additional production. The poor grade achievers are engaged only in the manual operations in the production lines, so that they can take additional time to become more accustomed to the machines and the job.

After the successful completion of this training, it is expected that the 61 skilled workers will be offered jobs by Jennys in their Shyampur export factory. The trained supervisors will continue to train new workers to be hired in the future. It is anticipated that Jennys will require hiring another 500 new workers in the next year.

Workforce development with Apex Adelchi

A tripartite agreement with LFMEAB and Apex Adelchi was signed in January 2010 for the purpose of training 200 unskilled workers in the footwear sector every three months for one full



year, resulting in a total of 800 skilled workers trained in four batches. The training is focused on manipulation and cutting of leather, prefabricating and sewing, and lasting and finishing of shoes. This initiative will leverage the resources of the Apex facilities and develop a pool of workers for the sector. The first batch started in February 2010. PRICE employed a training coordinator to follow up on the progress of this activity.

Training program under tripartite agreement

LFMEAB is monitoring the progress of the program and disseminating information to member organizations regarding this initiative. They will also work as a placement office for the trainees upon graduation, to ensure that Apex gets 75 per cent of the workers and other member organizations get the remaining 25 per cent. Requests have already been submitted to the association office for hiring these graduates from at least two other member organizations.

The first group of trainees has 187 workers, of which almost all (179) are women. Among them 27 are in cutting, 114 in sewing and 46 in lasting. The training coordinator demonstrates the basics of each section of footwear manufacturing and engages the trainees as assistants/helpers to the main production line workers. The training module that PRICE developed at Jennys is being used here, along with some additional specific requirements. The concerned line supervisors guide and monitor their trainees. Those trainees that are confident are given opportunities to work directly on occasion. Already 75 trainees were working in the regular production line by the end of the first month of training and made positive contributions to overall production in March.

Linking SMEs to markets

Formed in 2009 with assistance from PRICE, a group of SMEs named Leather Technologist SME Entrepreneurs (LTSE), who are graduates from Bangladesh College of Leather and Engineering Technology, (BCLET), is developing business linkages with Aarong, one of the lead firms/buyers of leather products in Bangladesh. Knowing that Aarong is looking for new subcontractor producers and following an agreement between PRICE and a group of leather technologists, PRICE initiated dialogue with Aarong authority to enlist the SMEs as their suppliers, a mutually beneficial solution.



Product display and evaluation session during market linkage program at Aarong

PRICE successfully convinced the Aarong authority to arrange a half-day linkage workshop for SMEs, followed by a display of their products at Aarongs' Tejgaon corporate center on January 11. PRICE organized and assisted seven SMEs to prepare for the event and also supported the development of a product catalogue to be distributed to Aarong management. An eleven member Aarong team attended the workshop, which was moderated by PRICE.

Aarong management assessed the SMEs and their products and selected four SMEs to work within their supply chain. PRICE facilitated a visit for the Aarong team to those four factories. PRICE also facilitated the sample development process. The samples have now been approved by Aarong and the four SMEs are awaiting the work orders.

The PRICE team is currently in dialogue with two other large firms, Bata Shoe Company and Apex-Gallery, to undertake similar initiatives in connecting SMEs with their supply chain.

Promoting access to finance for SMEs

For the leather sector SMEs, finance is a major constraint. To assist the SMEs in this sector to get better access to formal finance, PRICE linked the LTSE group with the access to finance component of the ITC Geneva BLSC project, implemented by the Leather Sector Business Promotion Council (LSBPC). Initially ITC, in collaboration with LSBPC, identified five clusters in Dhaka to provide them financial assistance from various commercial banks who are partnering with LSBPC. However, the LTSE cluster was not included in that beneficiary list. PRICE introduced this LTSE group to the LSBPC, explained PRICE's engagement with them and arranged visits to the factories of LTSE members for the ITC consultant. As a result of this initiative, the ITC recommended the inclusion of seven SMEs from LTSE in the list as cluster number six. LSBPC signed a contract on March 18 with Janata Bank Ltd to sanction a loan of Tk. 70 million for the development of enterprises enlisted in those six clusters.

Strengthening the capacity of the BLSC laboratory

PRICE supported the Bangladesh Leather Service Center (BLSC) laboratory to add a new facility for testing the percentages of two harmful chemicals in leather products: formaldehyde and chrome-VI. BLSC lacked the technical expertise and knowledge for installing and operating an Ultra Violet (UV) Visibility machine to detect the level of those chemicals. Most local exporters conduct these tests by sending samples to neighboring countries or by paying the importers to do the tests on their own. This is not only costly, but also time consuming and as a



result the sector is losing revenues and competitiveness. After signing a collaborative MoU with LSBPC, PRICE contracted the Footwear Design and Development Institute (FDDI) of India to provide training to the local experts who, upon completion of the training, will have the capacity and skills to operate the UV machine to conduct chemical analysis of leather and leather products. The training was held March 6-11.

International consultant demonstrating UV Visibility machine operations at BLSC Lab

The FDDI expert trained nine local resources, lab technicians of BLSC and teachers of Bangladesh College of Leather & Engineering Technology (BCLET) on setting and operating

the machine, conducting chemical tests including formaldehyde and chrome-VI, and preparing the lab staff to perform required Standard Operating Processes (SOPs) for other tests. Now BLSC can conduct these tests on its own and the UV machine is operational. PRICE informed sector players about the enhanced capacity of the BLSC lab through LFMEAB and other industry associations, and the lab has already received eight samples to test using the UV equipment.

Quantitative results

Leather sector partners increased their sales by US \$479,000 in this quarter, of which almost half came from the workforce development programs with LFMEAB member companies

Apex Adelchi Footwear Ltd. appointed 75 new workers trained by PRICE, generating additional sales of \$78,975 this quarter. Eighteen people trained by PRICE at TTC are working for LFMEAB member Bay Footwear since November 2009, resulting in increased production and sales of \$72,000. Jennys Shoes, which employs 61 PRICE trained workers, has increased their sales by \$72,174 in the same period.

LTSE member BAG sold 8000 additional pairs of shoes as a result of the improved and reinforced relationship that PRICE created for them with their buyers by organizing a “buyer-seller meet” in December 2009 and a subsequent follow-up event. This brought \$75,362 of additional sales to BAG.

PRICE trained two supervisors of Raian Shoes (a PRICE-BLSC initiative) on modern footwear technology and management. After the training they shared their knowledge with their 120 workers. The supervisors learned new techniques from the training and recommended that the management procure relevant machines to increase productivity and improve the quality of shoes. Raian Shoes hired and trained 30 new workers as recommended. The management was satisfied with the supervisors’ improved performance after the training and was convinced to purchase the recommended machines. Thus, Raian Shoes’ production increased to 500 pairs/day from 350 pairs/day and sales increased by US \$105,978 during the quarter.

PRICE supported Deya Leather, another beneficiary under the PRICE-BLSC initiative, in expanding its business by training one of their most reliable supervisors on modern footwear technology and management. After the PRICE training, Deya’s owner co-invested with the supervisor by setting up a subsidiary production unit of Deya called Zenith Footwear to meet the growing demand for its products in the market. Deya appointed 60 workers to run this new unit of which 10 were trained by PRICE at BASA and the rest are new and semiskilled. This resulted in more production and sales for Deya worth \$67,391 in this quarter.

A total of 194 jobs were created by the partners between January and March 2010. Of those, 125 (64%) were for women. Apex Adelchi Footwear created jobs for 74 women and one man in this quarter. BAG recruited 12 new skilled workers (including three women) to meet the additional sales order of 8000 pairs of shoes in this period. Raian Shoes employed 30 new workers (20 of them are women) with the expansion of their business. Deya Leather recruited 60 new workers (24 women) in their expanded business.

The partner organizations increased their investment in fixed assets by \$85,000 during the quarter. Apex Adelchi Footwear allowed the trainees to use machineries equivalent to an investment of \$25,000 along with other facilities. Raian Shoes invested \$26,667 in buying new machines for expansion of production. Deya Leather invested \$14,493 to establish its new production unit and purchase machineries. PRICE trained nine technicians from BLSC and BCLET on usage of the UV visibility machine (to test percentages of formaldehyde and chrome-VI in leather and leather products) by bringing an FDDI expert from India. After the training program, BLSC immediately received sample orders to carry out four formaldehyde tests and four chrome-VI tests. BLSC purchased a UV visibility machine at \$11,500. In this period, 271 people received assistance for workforce development, of which 89% are women.

The following table shows the major accomplishments of the sector in the quarter:

Performance of Leather Products Sector (Jan-Mar 2010)

Partners	Sales (USD)			Jobs			Investment (USD)
	Export	Domestic	Total	Women	Men	Total	
LFMEAB	227,649	0	227,649	77	13	90	32,319
Apex Footwear	78,975	-	78,975	74	1	75	25,000
Bay Footwear	72,000	-	72,000	-	-	-	-
Jennys Shoes	72,174	-	72,174	-	-	-	7,319
Landmark	4,500	-	4,500	-	-	-	-
Apex L/R Craft		-	-	3	12	15	-
LTSE	-	78,261	78,261	4	10	14	-
BAG		75,362	75,362	3	9	12	-
Karigar		2,899	2,899	1	1	2	-
BLSC	-	173,370	173,370	44	46	90	52,754
BLSC Lab	0	-	-	0	0	-	11,594
Raian Shoes	0	105,978	105,978	20	10	30	26,667
Deya Leather	0	67,391	67,391	24	36	60	14,493
Total	227,649	251,630	479,279	125	69	194	85,072

Training in the Leather Products Sector Jan-Mar 2010

SL	Partners	Workforce				Improve Technology				Management			
		Training	M	F	Total	Training	M	F	Total	Training	M	F	Total
01.	LFMEAB APEX ADELCHI (ongoing)	01	8	179	187								
02.	Bangladesh Leather Service Center (BLSC)	01				01	7	2	9				
03.	Jennys Footwear, LFMEAB	02	16	59	75								
Total (Leather)		04	24	238	262	01	7	2	9				

6. Equity Integration and Food Security

PRICE seeks to contribute to gender equity by improving the skills of women in its three focus sectors, promoting female employment, and increasing the access of women to credit, training and extension services.

Activities this quarter in the horticulture sector included the training of 61 women participants, in collaboration with Aid Agro Mart and EFADF Agro Business. The training on vegetable cultivation increased the knowledge of women farmers and their involvement in vegetable production. Also this quarter a total of 102 females received jobs from Organix, Padma Seeds, Konika, Murail, GKSSE and GUKED.

In the area of aquaculture, PRICE provided training to 1564 women on fish culture productivity and management in collaboration with partners SSS, NMS, JSK, Golden Harvest and Fishtech. 245 women farmers from SSS got loans for fish farming and procurement of farming inputs during this quarter. The average loan per person was 15,000 Taka, for a total of 3,675,000 Taka. As a result, female income and standing increased in their communities. Twelve females have already been employed by RDF, Fishtech and TMUS. In this quarter a total of seven females received training on contract farming and improved shrimp culture technique with Satkhira Feed Limited.

PRICE also developed and implemented training programs in the leather sector for 271 trainees, of which 240 were women, mostly originating in rural areas. The majority of jobs created this quarter with our leather sector partners – 125 out of 194 - were also for women.

Job creation and higher incomes for PRICE beneficiaries – both rural and urban - means increased capacity to access food and improve diet. Additionally, when appropriate PRICE is promoting agricultural practices such as intercropping of different species of fish and shrimp, multistoried vegetable cultivation in dykes, and fish-rice crop rotation, which provide farmers with increased crop variety and food security.

Also, particularly in the case of small fish farmers, productivity increases supported by PRICE are having a direct positive effect on the quantity and quality of their diets and those of their family members, because an estimated 20% of their fish production is self-consumed.

ANNEX 1

PERFORMANCE INDICATORS

Performance of PRICE: Updated to March 2010

Custom Indicator 1	Total value of sales increased			
Result of Jan-Mar 2010	Result till Mar 2010	Target till Mar 2010	Target FY 2010	Project Target
\$ 7.5 million	\$ 27.8 million	\$ 25.5 million	\$ 40 million	\$ 200 million
Custom Indicator 2	Total number of full-time jobs created			
Result of Jan-Mar 2010	Result till Mar 2010	Target till Mar 2010	Target FY 2010	Project Target
1,042	5,976	5,608	10,000	40,000
Custom Indicator 3	Total value of investment increased			
Result of Jan-Mar 2010	Result till Mar 2010	Target till Mar 2010	Target FY 2010	Project Target
\$ 170 thousand	\$ 1.6 million	\$ 1.1 million	\$ 1 million	\$ 4 million
Custom Indicator 4	Number of persons participating in USAID workforce development programs			
Result of Jan-Mar 2010	Result till Mar 2010	Target till Mar 2010	Target FY 2010	Project Target
271	2,034	2,616	4,000	15,000
Custom Indicator 5	Number of staff (workers and managers) trained on key issues of Bangladesh Labor Law 2006*			
Result of Jan-Mar 2010	Result till Mar 2010	Target till Mar 2010	Target FY 2010	Project Target
0	339	n/a	n/a	n/a

Common Indicator 1	Number of firms receiving USG assistance to improve management practices			
Result of Jan-Mar 2010	Result till Mar 2010	Target till Mar 2010	Target FY 2010	Project Target
1,692	4,755	3,889	2,000	8,250
Common Indicator 2	Number of MSMEs receiving USG-supported assistance to access bank loans or private equity			
Result of Jan-Mar 2010	Result till Mar 2010	Target till Mar 2010	Target FY 2010	Project Target
1,283	2,276	1,169	300	1,400
Common Indicator 3	Number of firms receiving USG assistance to invest in improved technologies			
Result of Jan-Mar 2010	Result till Mar 2010	Target till Mar 2010	Target FY 2010	Project Target
2,689	13,339	16,516	4,000	17,250

ANNEX 2

Performance Measurement

The Indicators

Performance of the project and of the three sectors (Aquaculture, Leather and Horticulture) has been measured using eight defined indicators. Two types of indicators have been used to monitor PRICE's contribution to (1) assessment of the impact of PRICE's interventions and (2) key indicators of the global U.S. Foreign Assistance Framework. The first category is called custom indicators and the second is called common indicators. *Custom* indicators include impact, outcome, and output indicators of the Project Objective, Project Intermediate Results (PIRs), and Key Results Areas (KRAs) in order to track and report on project impact. *Common* indicators are used to report on PRICE's contribution to the global results of priority program areas of the U.S. Foreign Assistance Framework.

PRICE has used five custom indicators and three common indicators. The custom indicators are:

- i. Indicator 1: Total value of sales increased:
Justification: Economic activities are largely measured by the creation of sales.
It is the aggregation of the increase in total value of gross sales of assisted firms that can be attributed to PRICE activities. It is calculated in United States dollars and disaggregated by domestic and export sales.
- ii. Indicator 2: Total number of full-time jobs created:
Justification: True poverty reduction means having a decent job with jobs arising from increases in sales and investment across the value chains in response to market demand. Full-time equivalent jobs will be defined as those equal to 260 work-days per year for non- agricultural production and 150 days for agricultural production (given the seasonality associated with agriculture work). Only new jobs will count, calculated by taking the total number of work days and dividing by 260 or 150, as appropriate. A new job will be attributed to the year in which the job originated.
- iii. Indicator 3: Total value of investment increased:
Justification: Economic activities are largely measured by increased investment.
It is the aggregation of the increase in the total value of investment of assisted firms that can be attributed to PRICE activities. Investment will include loan and private equity. It is calculated in United States dollars and disaggregated by domestic and export sales.
- iv. Indicator 4: Number of persons participating in USAID workforce development programs:
Justification & Management Utility: This indicator measures the number of individuals who enrolled in USG-funded workforce development programs. It is assumed that increased access to quality programs will result in a more skilled, adaptable workforce. It will give the number of persons participating in USG-funded workforce development programs including, technical and vocational programs and workforce readiness programs.
- v. Indicator 5: Number of staff (workers and managers) trained on key issues of Bangladesh Labor Law 2006*:

It will give the number of persons (workers and managers) participating in USG-funded training programs on key issues of Bangladesh Labor Law 2006.

*USAID to send formal notification for this change.

The common indicators are as follows:

- i. Indicator 1: Number of firms receiving USG assistance to improve management practices:
Justification & Management Utility: Firms improve their productivity, and in turn their competitiveness, by adopting improved management practices.
This indicator measures the number of firms that receive USG assistance to improve their management practices (financial management, strategic planning, marketing, etc.).
- ii. Indicator 2: Number of MSMEs receiving USG-supported assistance to access bank loans or private equity:
Justification & Management Utility: Firms improve their productivity, and in turn their competitiveness, by accessing capital and increasing investment in productive assets.
Number of micro, small or medium enterprises who are receiving assistance from USG supported sources to obtain bank loans or private properties.
- iii. Indicator 3: Number of firms receiving USG assistance to invest in improved technologies:
Justification & Management Utility: Firms improve their productivity, and in turn their competitiveness, by investing in new technologies.
It is the number of micro, small and medium enterprises who are receiving USG assistance.

Data Collection & Tools

The M&E system is designed to involve all technical team members and project counterparts in collecting data for baseline and performance. Because technical team members and counterparts have first-hand knowledge of their activities and resulting impacts, they helped to efficiently collect and verify basic M&E data in their respective technical areas.

Format for data collection has been designed by the PRICE M&E taking suggestions from the technical team. From time to time, it has been modified to fit the project requirement.

Baseline periods are taken as one year right before the impacts are expected on the partners.

Performance of the partners is collected quarterly after the baseline period ends.

Baseline and quarterly performance data has been collected in two ways: partner interview, and, sample survey. The first method is suitable for the individual SMEs PRICE is working with. The approach is to proceed in a way of discussion with the partner enterprise and lead the discussion according to the need for information on performance. The partner might recall the information from memory or might check relevant business records for providing the information. Format for recording the gathered information were designed by the M&E. The interviews are conducted by taking assistance from the PRICE technical team who have contact with partner enterprises and thus can easily collect data from them ensuring the quality of data.

The second method for data collection, sample survey, has been used because in some cases where performance data on sales, jobs and investment was not readily available from the partners. Those partners did not have any organized way of keeping records on parameters like sales, jobs or investment. Thus to collect data from those partners such as fish farmers' associations who have large number of members (from 60 to 900), sample survey method has been used. These surveys can be of two types: a) with statistically viable sample size, b) with a minimum sample size of 30 or larger, to approach to normal distribution.

For type a, statistically viable sample size is calculated beforehand considering the character of population to be surveyed. Professional survey teams work for data collection after taking detailed briefing on the project and process of data collection from the PRICE technical and M&E teams. Formats for data collection are provided by PRICE M&E. Sample points are selected at random. It has been decided PRICE will conduct this type of full-fledged surveys only annually, at the end of September, from now on. Cost and time required for conducting this type of survey for each partner with combined body of micro enterprises were considered huge to be conducted quarterly.

For type b, a minimum sample size of 30 or larger is taken. Statistical viability behind such decision is that when the sample size is greater than 30, the distribution approaches normal distribution. Also the homogeneity in the population (similar type of land, weather, availability of inputs, market linkage, sharing of knowledge etc.) is considered here. For the quarterly reports, this type of small surveys are conducted from now on. However, these results will be verified during the future annual surveys.

Data Analysis

The collected data are checked by PRICE technical team and M&E, to find out any unusual trend in data, outlier etc. M&E Team conducts visit to some partners to verify collected data. If any discrepancy is observed, it is consulted with the technical team before correction.

Then the data is processed and analyzed by the PRICE M&E. Data from sample surveys is extrapolated for getting the figure for the whole populations. The performance period data is compared with the baseline and the resulting change is taken as performance. All the partners' performances are summed up for getting the aggregate performance for each sector. Then the three sectors' performance is added to get the project performance.

Attribution:

PRICE alone is not attributable for the total improvement observed by the partners. However, considering the difficulty in isolating attribution for agro sector where there are a multitude of variables that are impossible to control or easily predict (such as weather and commodity prices), this report simply takes PRICE as one of the attributable factors behind the improvement.